

ARIZONA CTE PROGRAM STANDARDS AND MEASUREMENT CRITERIA

ADVANCED CONSTRUCTION TECHNOLOGIES, 46.0400.0	
1.0	MAINTAIN A SAFE WORK ENVIRONMENT
1.1	Follow job safety regulations and procedures for handling hazardous materials/chemicals according to OSHA guidelines and SDS (Safety Data Sheets)
1.2	Use appropriate personal protective equipment (PPE)
1.3	Evaluate types of fires and use of appropriate fire extinguishers
1.4	Maintain worksite safety and housekeeping (lighting, safety, etc.), including a safety plan for emergency situations
1.5	Identify first aid procedures
1.6	Demonstrate appropriate procedure for lifting heavy objects
1.7	Follow safe procedures in setting up scaffolding and using ladders
1.8	Demonstrate safe work procedures around electrical hazards
1.9	Use correct procedures for lockout/tagout
1.10	Report safety hazards
2.0	OPERATE HAND AND POWER TOOLS/EQUIPMENT
2.1	Inspect, use, and maintain hand tools
2.2	Inspect, use, and maintain portable power tools, powder-actuated tools, pneumatic tools, and extension cords
2.3	Inspect, use and maintain stationary power equipment
3.0	USE PLANS, SPECIFICATIONS, AND CODES

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3.1	Identify blueprint terms, components, and symbols
3.2	Identify a set of drawings/symbols/scales and legends
3.3	Read material schedules on blueprints
3.4	Relate information on blueprints to actual locations
3.5	Identify and use drawing dimensions
3.6	Recognize building codes (e.g., national, state, and local)
4.0	LAY OUT BUILDING LINES
4.1	Demonstrate the use and care of precision measuring instruments
4.2	Establish building lines and recognize trade-specific layout
4.3	Use a builder's level or transit and differential leveling procedures to determine site and building elevations
4.4	Record site layout data and information in field notes using accepted practices
5.0	PERFORM CONCRETE/MASONRY WORK
5.1	Prepare and pour a footing
5.2	Construct a foundation wall or pier
5.3	Lay brick/block to specification
5.4	Cut brick and block accurately
5.5	Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form
5.6	Construct concrete formwork

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5.7	Estimate the material needed for concrete/masonry work
6.0	LAY OUT AND INSTALL FLOOR SYSTEMS
6.1	Install sill plate(s)
6.2	Set posts
6.3	Construct or place girders/beams
6.4	Match selected fasteners used in floor framing to their correct uses
6.5	Estimate the amount of material needed to frame a floor assembly
6.6	Lay out and construct floor assembly
6.7	Install a subfloor using plywood/OSB panels
7.0	DEMONSTRATE WALL AND CEILING FRAMING
7.1	Lay out wall lines including plates, corner posts, door and window openings, partition Ts, and bracing and plan for the installation of fire stops
7.2	Assemble wood and metal stud walls
7.3	Assemble, erect, and brace exterior walls for a frame building
7.4	Cut and install ceiling joists on a wood frame building
7.5	Estimate the materials required to frame walls and ceilings
8.0	FRAME AND FINISH A ROOF
8.1	Construct conventional roof and/or set truss systems
8.2	Install roof sheathing and coverings
8.3	Frame and/or illustrate a roof opening

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8.4	Demonstrate the techniques for installing a variety of types of roofing materials
8.5	Estimate the materials used in framing and sheathing a roof
9.0	IDENTIFY CONDITIONED LIVING SYSTEMS
9.1	Identify types and use of thermal insulation, vapor barriers, and R-values
9.2	Describe the function of an HVAC system
9.3	Describe various types of energy efficient systems (e.g., solar electricity, solar water heating, cocoon insulation systems, gray water systems, turbines, etc.)
10.0	APPLY EXTERIOR FINISHES
10.1	Identify and/or install frieze boards or soffit
10.2	Identify and/or install exterior moldings and trim
10.3	Identify and/or install various types of siding
10.4	Demonstrate correct installation methods to eliminate water intrusion
10.5	Explain and/or demonstrate installation of exterior stucco finish
11.0	INSTALL DOORS AND WINDOWS
11.1	Install door systems
11.2	Install door hardware
11.3	Install window systems
11.4	Install baseboards and casings
12.0	INSTALL INTERIOR TRIM AND STAIRS
12.1	Lay out and cut stringers

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12.2	Determine the number and sizes of risers and treads required for a stairway
12.3	Build a small stair unit
12.4	Lay out a skirt board
13.0	ASSEMBLE PIPING, WASTE, AND VENT DISTRIBUTION SYSTEMS
13.1	Identify the major components of a drainage and water distribution system
13.2	Assemble a soil, waste, and vent system
13.3	Assemble a water distribution system
13.4	Install plumbing fixtures or equipment
13.5	Measure, cut, and join plastic and copper piping
13.6	Describe the functions of a drainage and water distribution system and how they malfunction
14.0	INSTALL ELECTRICAL COMPONENT/SYSTEM(S) TO CURRENT INDUSTRY CODE
14.1	Identify electrical service entrance requirements
14.2	Rough in electrical enclosures (switch boxes and outlet boxes, etc.) and cable
14.3	Select wire size and insulation selection size and rough in feeder and circuit
14.4	Install low voltage systems
14.5	Trim out electrical devices, appliances, light fixtures (luminaires), and ceiling fans
15.0	INSTALL INTERIOR WALL AND CEILING FINISH
15.1	Identify type and use of drywall
15.2	Demonstrate the proper techniques for cutting drywall

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15.3	Fasten drywall to ceiling and walls
15.4	Apply mud, use tape appropriately, and install corner bead
15.5	Demonstrate methods of paint application